

CLAIMS

1. A data transmission apparatus which extracts content data that is a copyrighted digital work from a file, and transmits the content data to a reception apparatus,

5 wherein the file is made up of (i) the content data and (ii) reproduction control information used for a reproduction process of the content data, the content data and the reproduction control information being multiplexed, and

the data transmission apparatus comprises:

10 a front end processing unit operable to establish and initialize a transmission path of content data with the reception apparatus;

a control transmission unit operable to extract at least a part of the reproduction control information from the file, and transmit the extracted information to the reception apparatus, after the
15 transmission path is established and initialized by said front end processing unit;

a packet generation unit operable to acquire at least a part of content data from the file, and packetize the acquired data; and

20 a content transmission unit operable to transmit at least a part of the content data which has been packetized by said packet generation unit.

2. The data transmission apparatus according to Claim 1,

25 wherein the reproduction control information which has been multiplexed in the file is structured in a tabular form, per data unit which is plurally included in the content data, said reproduction control information including reproduction control unit information used for reproducing from the data unit,

30 said control transmission unit extracts, from the reproduction control information of the file, and transmits the reproduction control unit information related to a data unit which is requested by the reception apparatus, and

said packet generation unit acquires and packetizes the content data starting from the data unit requested by the reception apparatus.

5 3. The data transmission apparatus according to Claim 2,
 wherein the reproduction control unit information indicates
 details to inform a timing when a decoding process should be started
 on the content data, said content data being transmitted by said
 content transmission unit and received by the reception apparatus.

10 4. The data transmission apparatus according to Claim 3,
 wherein the reproduction control unit information indicates,
 as the details to inform the timing, a time from a reception start of
 the content data to a start of the decoding process executed by the
15 reception apparatus.

5. The data transmission apparatus according to Claim 3,
 wherein the reproduction control unit information indicates a
 data amount of the content data received by the reception apparatus
20 as the details to inform the timing.

6. The data transmission apparatus according to Claim 5,
 wherein said control transmission unit converts the data
 amount indicated by the reproduction control unit information into
25 the time from the reception start of the content data to the start of
 the decoding process executed by the reception apparatus, and
 transmits the converted reproduction control unit information.

7. The data transmission apparatus according to Claim 6,
30 wherein said control transmission unit converts the
 reproduction control unit information, according to a transmission
 state of the content data which is transmitted by said content

transmission unit.

8. The data transmission apparatus according to Claim 7,
wherein said content transmission unit changes a speed to
5 transmit the content data based on a state of the transmission path.

9. The data transmission apparatus according to Claim 2,
wherein the content data is moving picture data structured
including a plurality of pictures, and
10 the reproduction control information is structured including
the reproduction control unit information per each of the plurality of
pictures included in the content data.

10. The data transmission apparatus according to Claim 2,
15 wherein the content data is moving picture data structured
including a plurality of pictures, and
the reproduction control information is structured including
the reproduction control unit information per each of the
intra-picture coded pictures included in the content data.

20 11. The data transmission apparatus according to Claim 2,
wherein the content data is moving picture data structured
including a plurality of pictures, and
the reproduction control unit information indicates whether or
25 not a correct result of decoding process can be acquired from a head
picture of the data unit.

12. The data transmission apparatus according to Claim 2,
wherein the content data is moving picture data structured
30 including a plurality of pictures, and
the reproduction control unit information indicates a part
where a correct result of decoding process can be first acquired in

the case where a decoding process is started from a head picture of the data unit.

13. The data transmission apparatus according to Claim 2,
5 wherein the content data is moving picture data including a scene made up of a plurality of consecutive pictures as the data unit, and

the reproduction control information indicates information which is necessary for initialization in decoding the plurality of
10 pictures that make up said each scene.

14. The data transmission apparatus according to Claim 1,
wherein the content data is moving picture data structured including a plurality of pictures, and

15 the reproduction control information indicates a cycle of pictures which can be randomly accessed among said plurality of pictures.

15. The data transmission apparatus according to Claim 1,
20 wherein the reproduction control information multiplexed in the file is reproduction control unit information used for reproducing from one predetermined data unit included in the content data,

said control transmission unit extracts, from the file, and transmits the reproduction control unit information, according to a
25 request from the reception apparatus, and

said packet generation unit acquires and packetizes the content data from the data unit, according to a request from the reception apparatus.

30 16. A method for transmitting data, in which content data that is a copyrighted digital work is extracted from a file and transmitted to a reception apparatus,

wherein the file is made up of (i) the content data and (ii) reproduction control information used for a reproduction process of the content data, the content data and the reproduction control information being multiplexed , and

5 the method for transmitting data comprises:

 a front end processing step of establishing and initializing a transmission path of content data with the reception apparatus;

 a control transmission step of extracting at least a part of the reproduction control information from the file, and transmitting the
10 extracted information to the reception apparatus, after the transmission path is established and initialized by said front end processing step;

 a packet generation step of acquiring at least a part of content data from the file, and packetizing the acquired data; and

15 a content transmission step of transmitting at least a part of the content data which has been packetized by said packet generation unit.

17. The method for transmitting data according to Claim 16,
20 wherein the reproduction control information which has been multiplexed in the file is structured in a tabular form, per data unit which is plurally included in the content data, including reproduction control unit information used for reproducing from the data unit,

 said control transmission step extracts, from the reproduction
25 control information of the file, and transmits the reproduction control unit information related to a data unit which is requested by the reception apparatus, and

 said packet generation step acquires and packetizes the content data from the data unit requested by the reception
30 apparatus.

18. The method for transmitting data according to Claim 17,

wherein the reproduction control unit information indicates details to inform the content data of a timing when a reproduction process should be started, said content data transmitted by said content transmission step and stored by the reception apparatus.

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19. A program for extracting content data that is a copyrighted digital work from a file, and transmitting the extracted data to a reception apparatus,

10 wherein the file is made up of (i) the content data and (ii) reproduction control information used for a reproduction process of the content data, the content data and the reproduction control information being multiplexed, and

the method for transmitting data causes a computer to execute:

15 a front end processing step of establishing and initializing a transmission path of content data with the reception apparatus;

a control transmission step of extracting at least a part of the reproduction control information from the file, and transmitting the extracted information to the reception apparatus, after the
20 transmission path is established and initialized by said front end processing step;

a packet generation step of acquiring at least a part of content data from the file, and packetizing the acquired data; and

25 a content transmission step of transmitting at least a part of the content data which has been packetized by said packet generation unit.